

WHAT IS CLAIMED IS:

1. An illumination apparatus which directs light from a light source to an illuminated area, comprising:

a plurality of light emitters as the light source;

a lighting unit configured to cause the light emitters to emit light so that the intensities of light emitted by them can be adjusted;

an optical system configured to, of light emitted by the emitters, direct light passed through its light concentration area to the illuminated area;

a light control member configured to perform at least one of changing the path of light from the emitters to be directed to the illuminated area and moving of the light emitters;

a movement unit configured to allow the light control member to operate; and

a light selector control unit configured to control at least one of the movement unit and the lighting unit so as to select light to be directed to the illuminated area from light of the emitters,

wherein the light selector control unit controls the lighting unit to cause an emitter to emit light when it is positioned in the vicinity of the light concentration area by the operation of the light control member.

2. The apparatus according to claim 1, wherein the light selector control unit controls the lighting unit so that, when an emitter does not face the light concentration area by the operation of the light control member, it emits light the intensity of which is weaker than when it faces the light concentration area.

3. The apparatus according to claim 2, wherein the light selector control unit controls the lighting unit so as to turn off an emitter while it does not face the light

concentration area by the operation of the light control member.

4. The apparatus according to claim 1, wherein the light selector control unit controls the lighting unit so as to cause an emitter to emit light continuously while it faces the light concentration area.

5. The apparatus according to claim 4, wherein the light selector control unit controls the lighting unit so as to vary the intensity of light emitted by the emitter to be emitted during continuous emission.

6. The apparatus according to claim 5, wherein the light selector control unit controls the lighting unit so as to increase the magnitude of a current applied to the emitter with time during continuous emission.

7. The apparatus according to claim 4, wherein the light selector control unit controls the lighting unit so as to cause an emitter to emit light only while its light emitting surface is covered in its entirety with the light concentration area.

8. The apparatus according to claim 1, wherein the light selector control unit controls the lighting unit so as to cause a plurality of emitters which are positioned in the vicinity of the light concentration area to emit light simultaneously.

9. The apparatus according to claim 1, wherein the light selector control unit controls the following two states: the transient state in which at least one of the movement unit and the lighting unit is controlled in order to allow a selection from

the emitters; and the stable state in which a selection can be made from the emitters, and wherein the stable state is the one in which the illuminated area is illuminated.

10. A projector display apparatus comprising:

an illumination apparatus which directs light from a light source to an illuminated area including:

a plurality of light emitters as the light source;

a lighting unit configured to cause the light emitters to emit light so that the intensities of light emitted by them can be adjusted;

an optical system configured to, of light emitted by the emitters, direct light passed through its light concentration area to the illuminated area;

a light control member configured to perform at least one of changing the path of light from the emitters to be directed to the illuminated area and moving of the light emitters;

a movement unit configured to allow the light control member to operate; and

a light selector control unit configured to control at least one of the movement unit and the lighting unit so as to select light to be directed to the illuminated area from light of the emitters,

wherein the light selector control unit controls the lighting unit to cause an emitter to emit light when it is positioned in the vicinity of the light concentration area by the operation of the light control member;

a light modulation device placed in the illuminated area configured to light-modulate light from the illumination apparatus according to image data;

a projection unit configured to project light modulated by the light modulation device; and

a light modulation device control unit configured to switch the light modulated states of the light modulation device,

wherein the light selector control unit of the illumination apparatus selects an emitter to emit light in synchronism with the switching of the light modulated states of the light modulation device.

11. The apparatus according to claim 10, wherein the light selector control unit in the illumination apparatus does not change a selected emitter during a modulation period from a point of time of switching to the next point of time of switching.

12. The apparatus according to claim 11, wherein the light modulation device is of a pulse width modulation type which represents the light modulated states according to image data in terms of one period of the modulation period.

13. The apparatus according to claim 10, wherein  
the light modulation device control unit represents the image data in one frame period, and

the light selector control unit in the illumination apparatus selectively turns on a fixed number of emitters during the frame period.

14. The apparatus according to claim 13, wherein the light modulation device is of a pulse width modulation type which represents the light modulated states

according to image data in terms of one period of the modulation period.

15. The apparatus according to claim 10, wherein

the movement unit in the illumination apparatus is configured to repeat operation and stop, and

the light selector control unit in the illumination apparatus selects an emitter position in the light concentration area when the movement unit is placed in the stopped state.

16. The apparatus according to claim 10, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so that, when an emitter does not face the light concentration area by the operation of the light control member, it emits light the intensity of which is weaker than when it faces the light concentration area.

17. The apparatus according to claim 16, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so as to turn off an emitter while it does not face the light concentration area by the operation of the light control member.

18. The apparatus according to claim 10, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so as to cause an emitter to emit light continuously while it faces the light concentration area.

19. The apparatus according to claim 18, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so as to vary the intensity of light emitted by the emitter to be emitted during continuous emission.

20. The apparatus according to claim 19, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so as to increase the magnitude of a current applied to the emitter with time during continuous emission.

21. The apparatus according to claim 18, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so as to cause an emitter to emit light only while its light emitting surface is covered in its entirety with the light concentration area.

22. The apparatus according to claim 10, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so as to cause a plurality of emitters which are positioned in the vicinity of the light concentration area to emit light simultaneously.

23. The apparatus according to claim 10, wherein  
the light selector control unit in the illumination apparatus controls the following two states: the transient state in which at least one of the movement unit and the lighting unit in the illumination apparatus is controlled in order to allow a selection from the emitters; and the stable state in which a selection can be made

from the emitters, and

the projector display apparatus is allowed to make a projector display in the stable state.

24. An illumination apparatus which directs light from a light source to an illuminated area, comprising:

a plurality of light emitters as the light source;

lighting means for causing the light emitters to emit light so that the intensities of light emitted by them can be adjusted;

optical means for, of light emitted by the emitters, directing light passed through its light concentration area to the illuminated area;

a light control member for performing at least one of changing the path of light from the emitters to be directed to the illuminated area and moving of the light emitters;

movement means for allowing the light control member to operate; and

light selector control means for controlling at least one of the movement means and the lighting means so as to select light to be directed to the illuminated area from light of the emitters,

wherein the light selector control means controls the lighting means to cause an emitter to emit light when it is positioned in the vicinity of the light concentration area by the operation of the light control member.

25. A projector display apparatus comprising:

an illumination apparatus which directs light from a light source to an illuminated area including:

a plurality of light emitters as the light source;

lighting means for causing the light emitters to emit light so that the intensities of light emitted by them can be adjusted;

optical means for, of light emitted by the emitters, directing light passed through its light concentration area to the illuminated area;

a light control member for performing at least one of changing the path of light from the emitters to be directed to the illuminated area and moving of the light emitters;

movement means for allowing the light control member to operate;  
and

light selector control means for controlling at least one of the movement means and the lighting means so as to select light to be directed to the illuminated area from light of the emitters,

wherein the light selector control means controls the lighting means to cause an emitter to emit light when it is positioned in the vicinity of the light concentration area by the operation of the light control member;

a light modulation device placed in the illuminated area for light-modulating light from the illumination apparatus according to image data;

projection means for projecting light modulated by the light modulation device; and

light modulation device control means for switching the light modulated states of the light modulation device,

wherein the light selector control means of the illumination apparatus selects an emitter to emit light in synchronism with the switching of the light modulated states of the light modulation device.